

FIG. 1

106

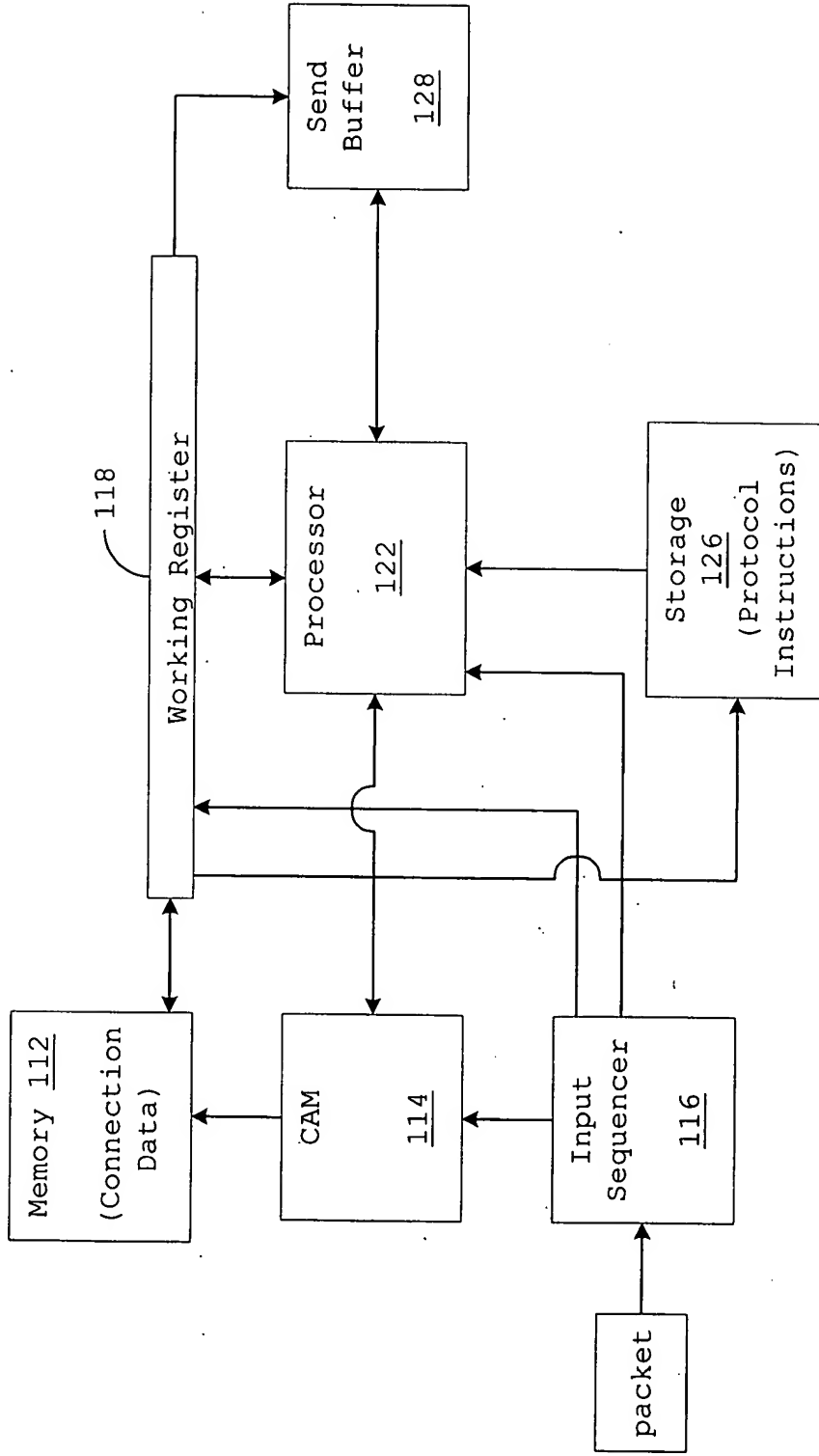


FIG. 2

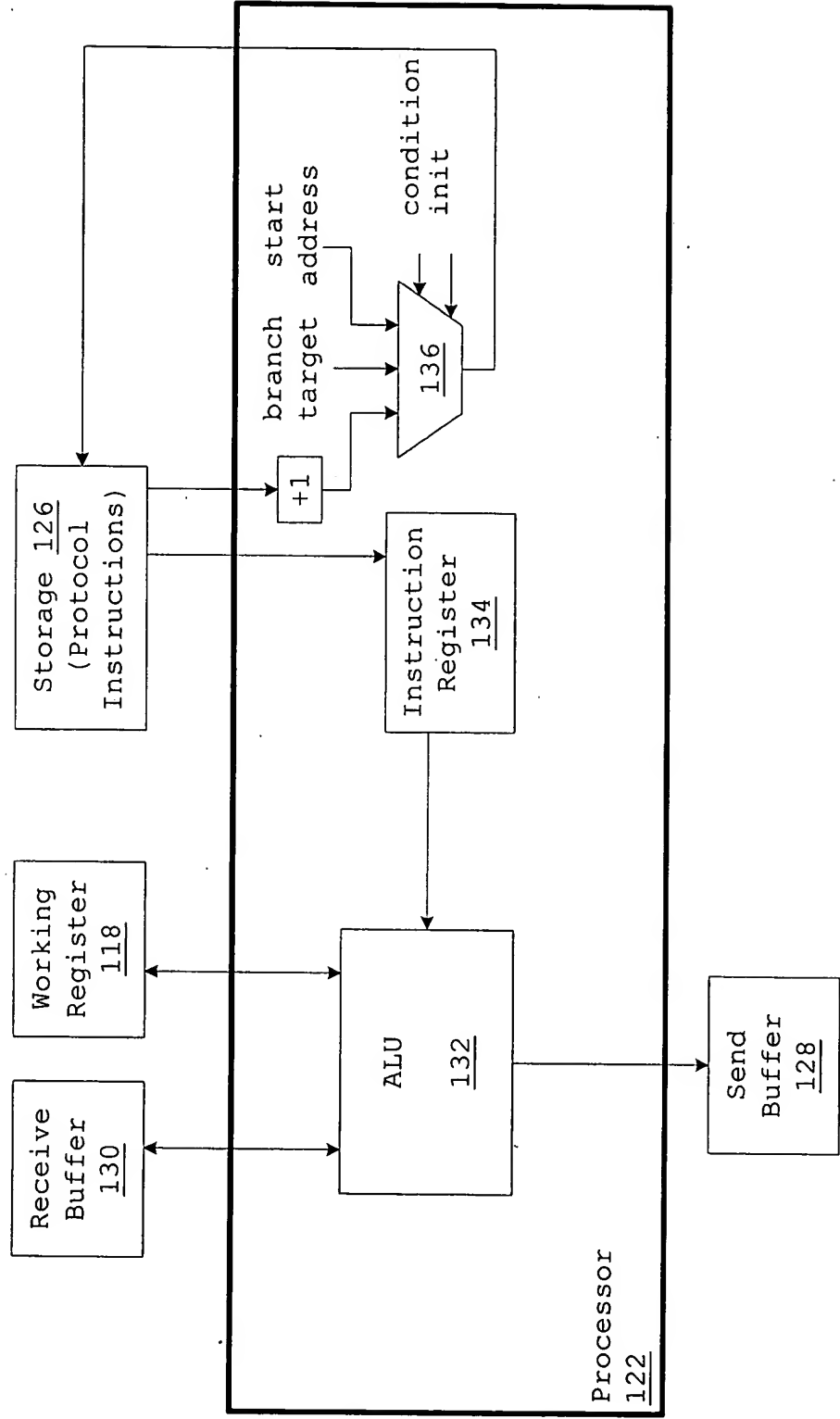


FIG. 3

# NETWORK PROTOCOL PROCESSOR

S. R. Vangal et al.

P17737

Sheet 4 of 32

Instruction	Operands
LOAD	regA <-- data
MOV	regA --> regB
AND / OR	regA regB --> cond
ADD / SUB	regA regB --> regC
CMP / EQUAL	regA regB --> cond
NOT	regA --> regC
BREQZ/BRNEQZ/JMP	label
SHL2	regA
CAM1CLR	index
TCBWR	index

FIG. 4

# NETWORK PROTOCOL PROCESSOR

S. R. Vangal et al.

P17737

Sheet 5 of 32

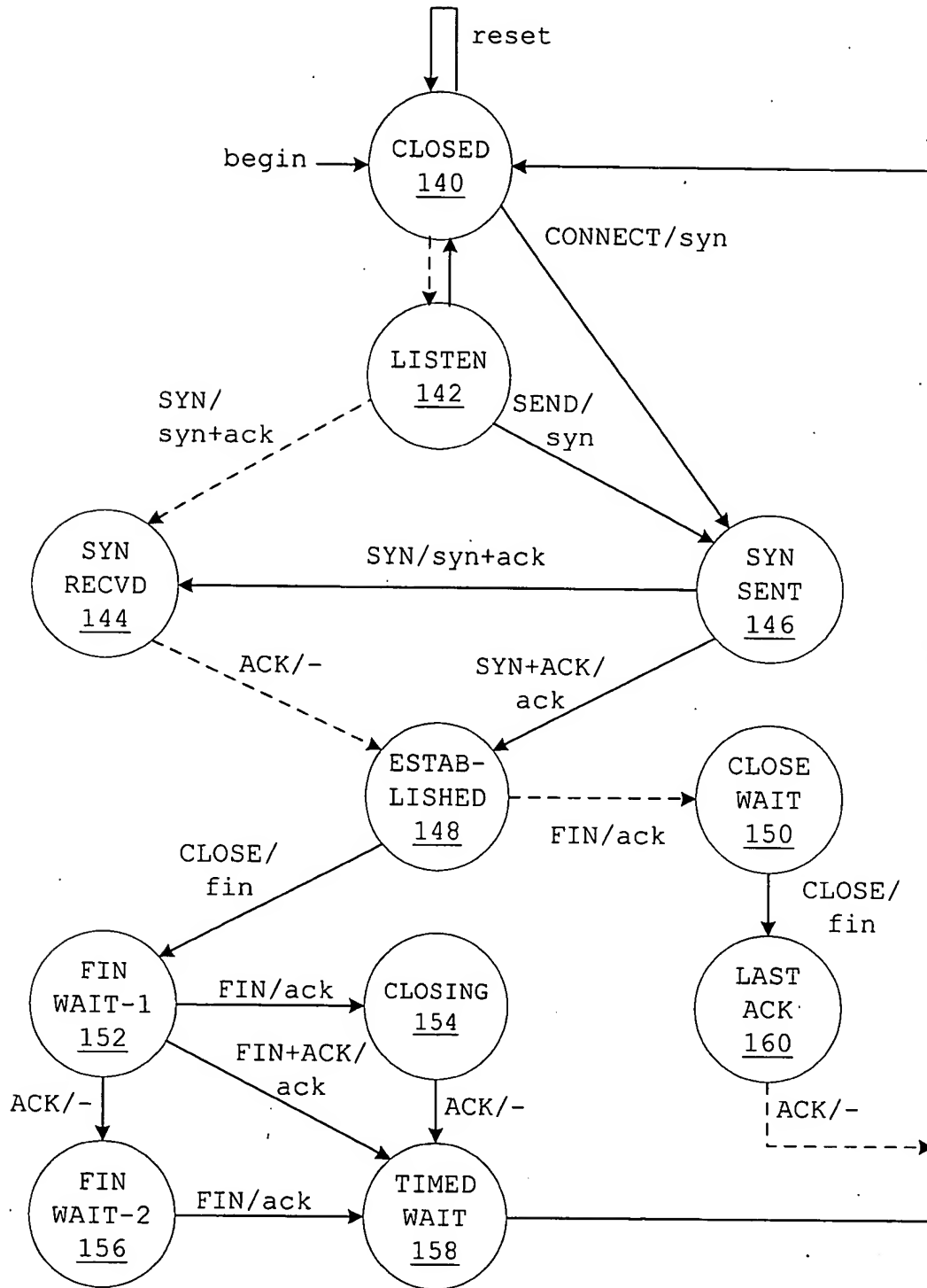


FIG. 5 (PRIOR ART)

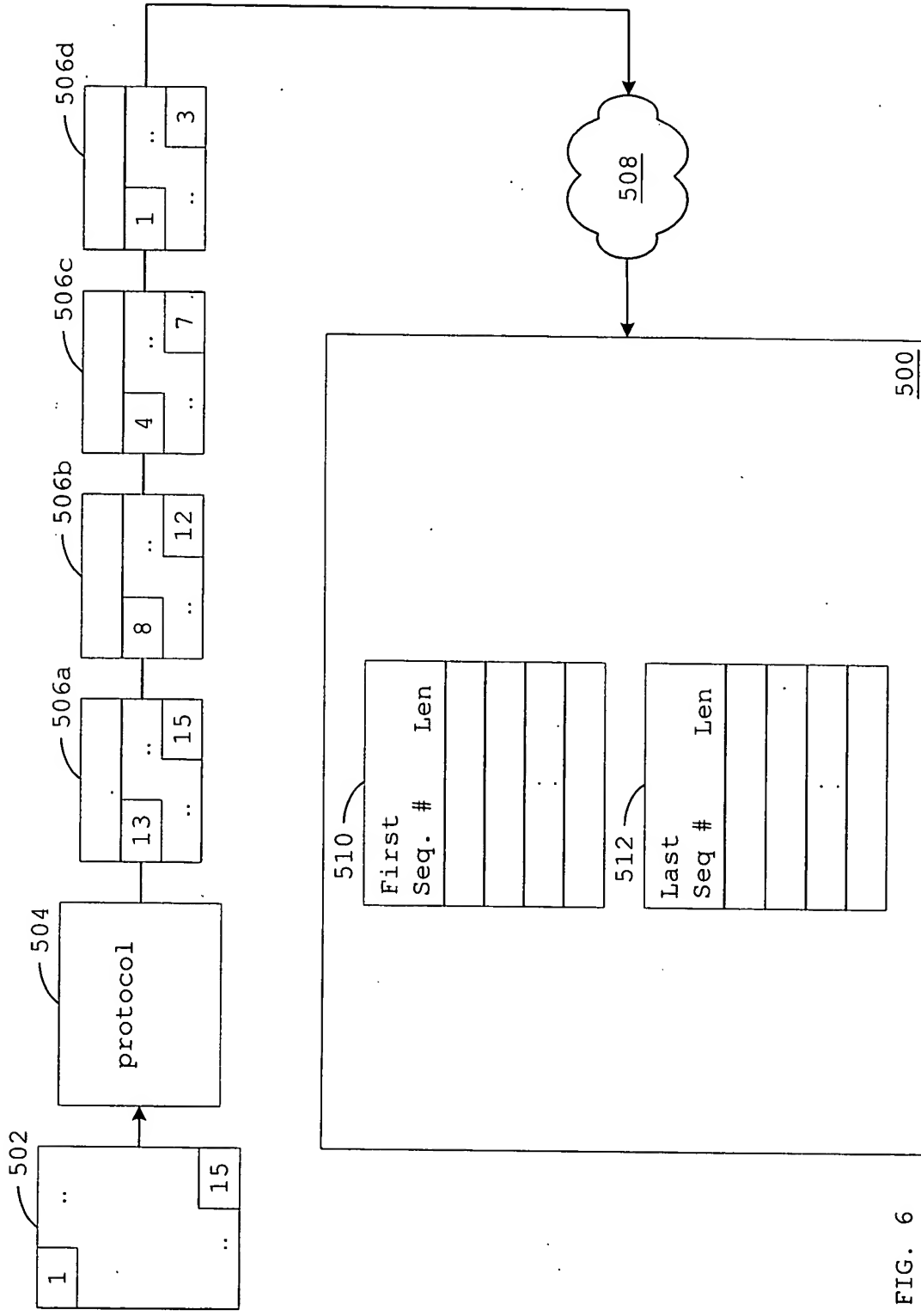


FIG. 6

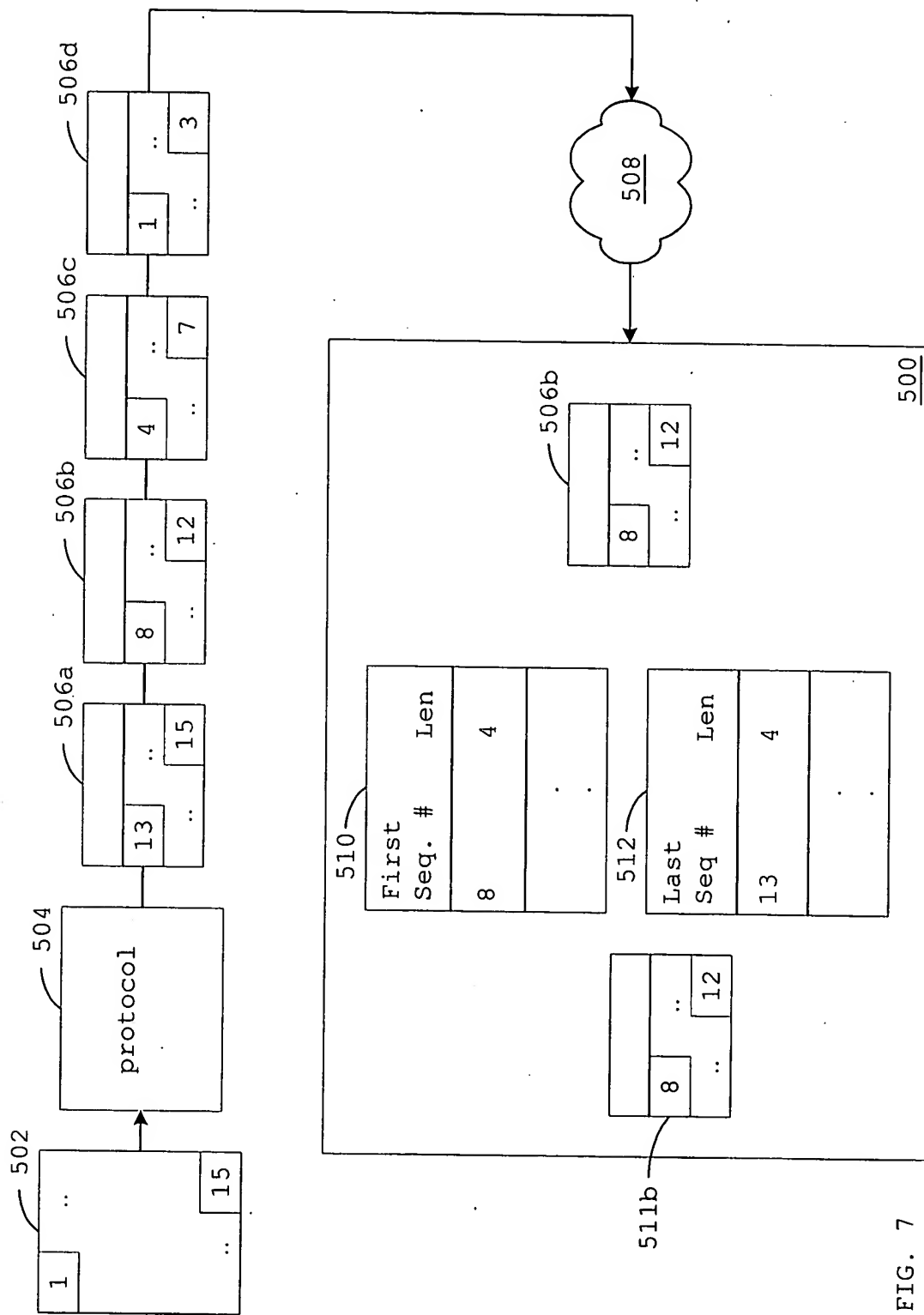
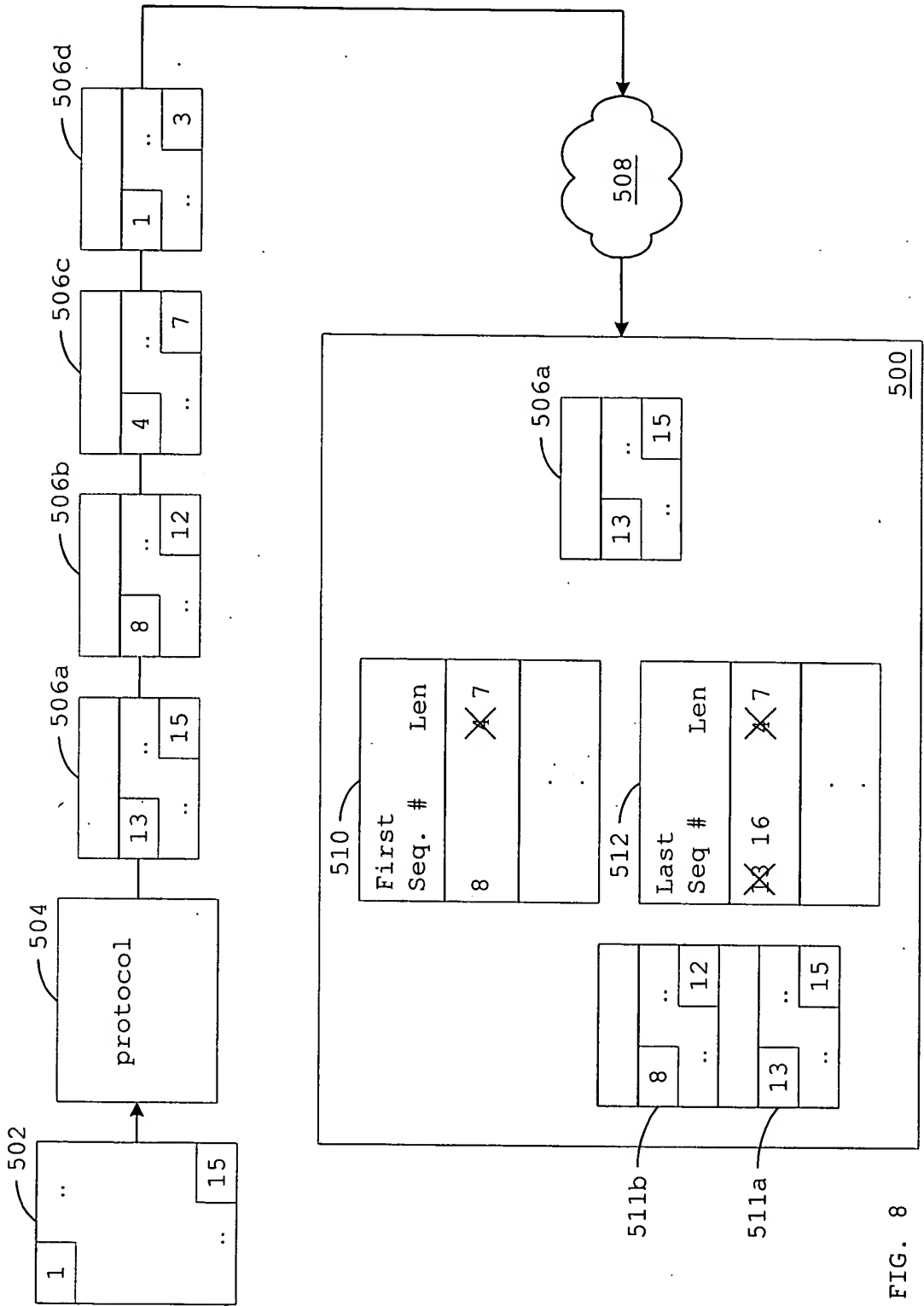
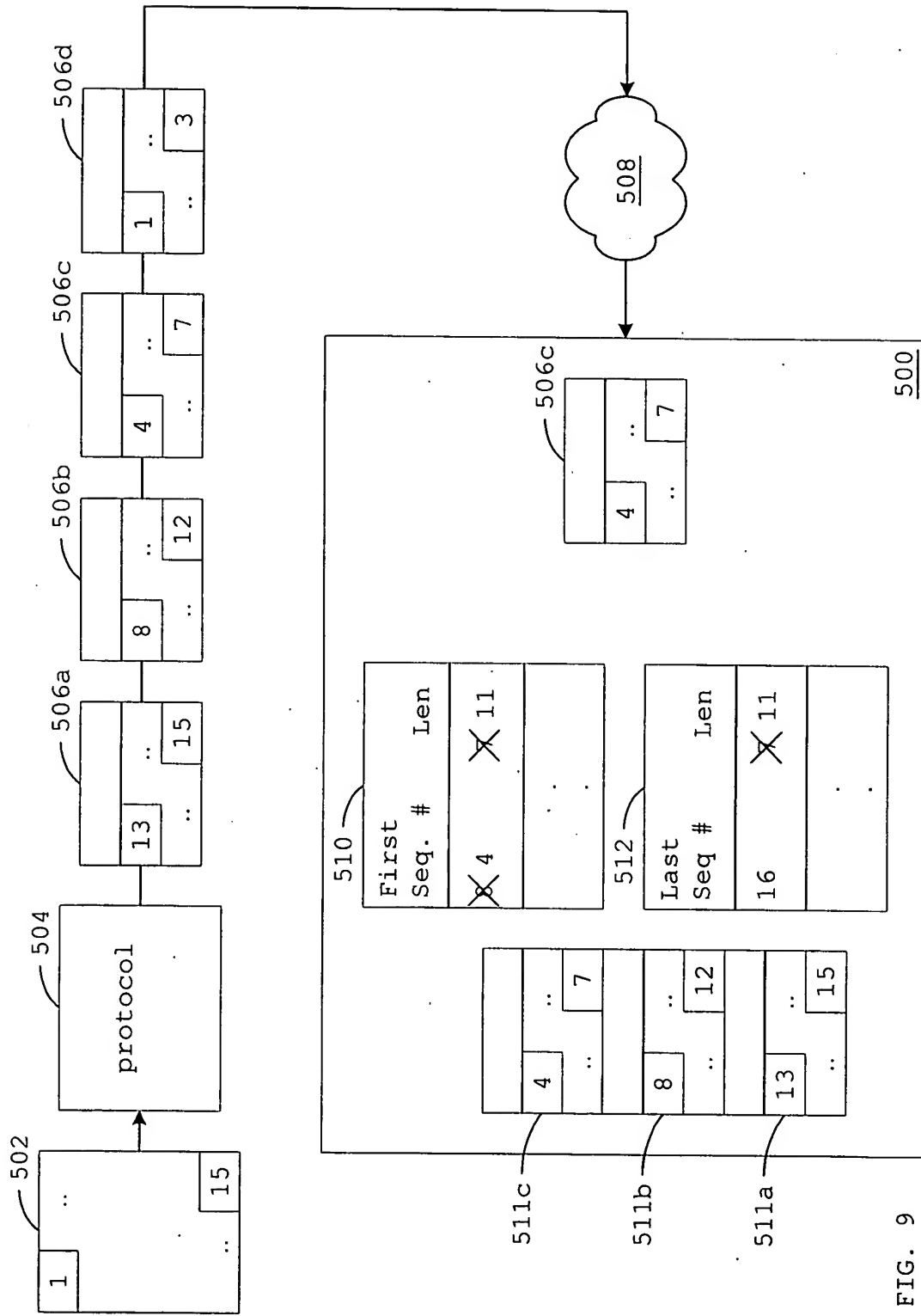


FIG. 7







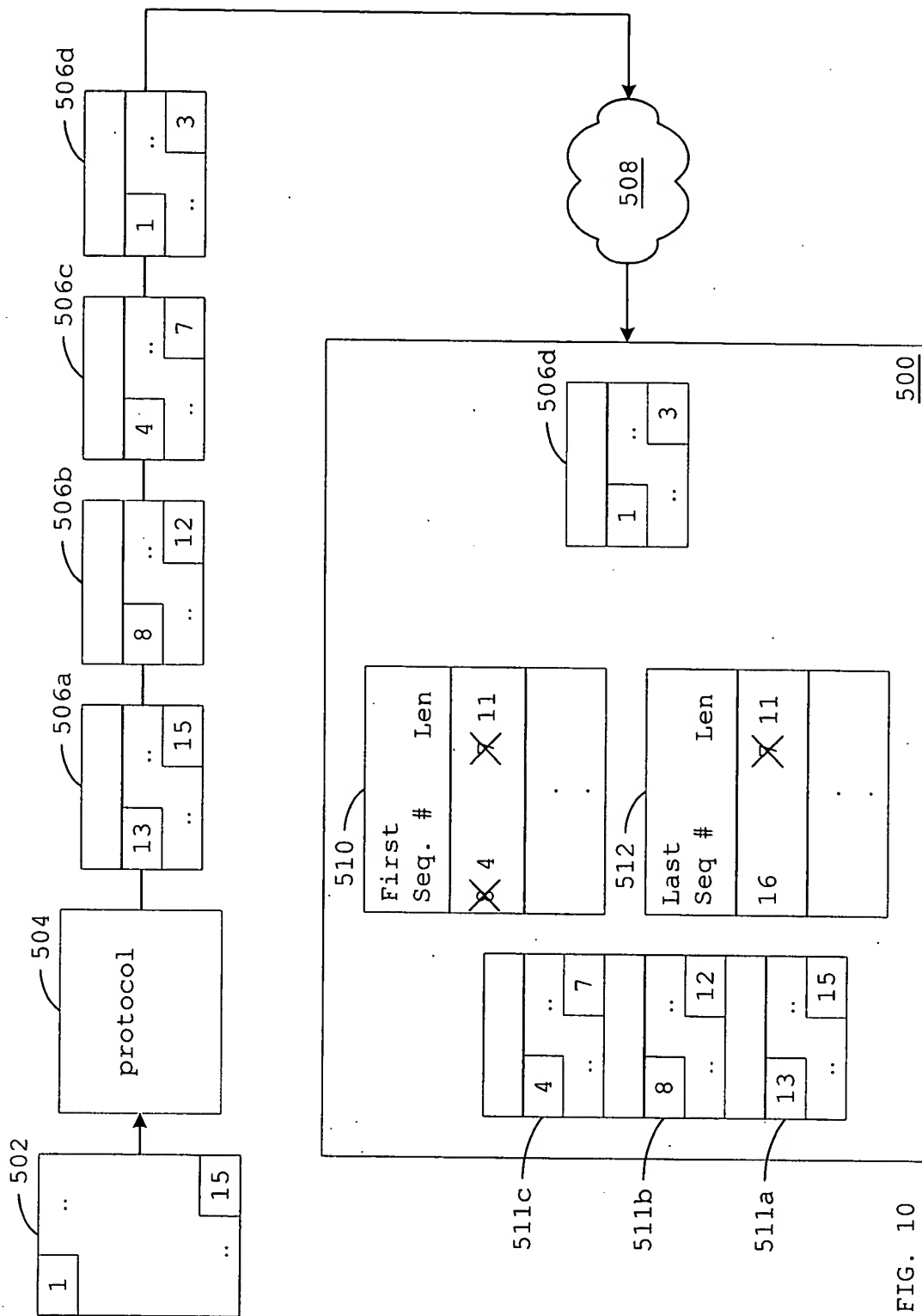


FIG. 10

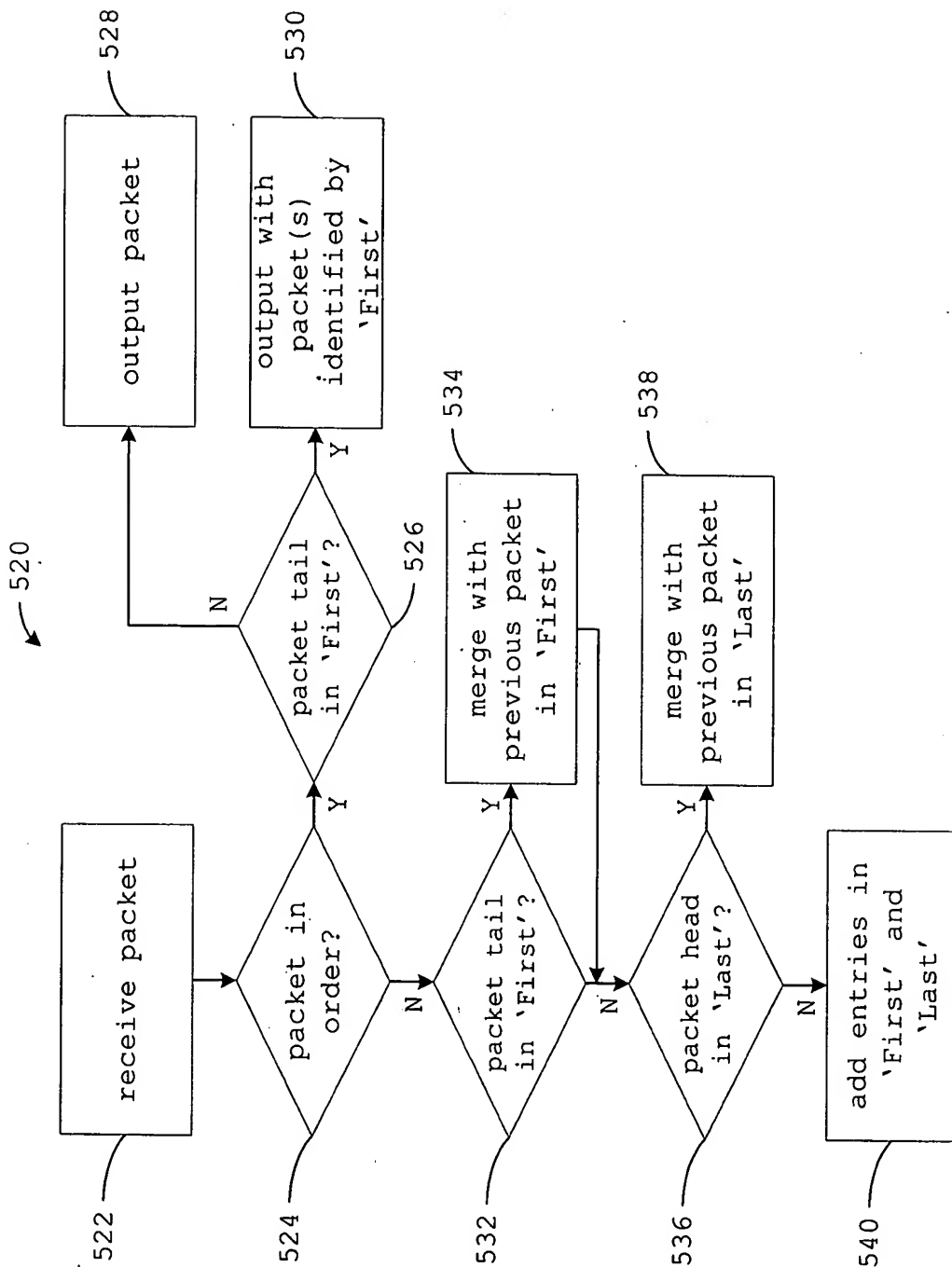


FIG. 11

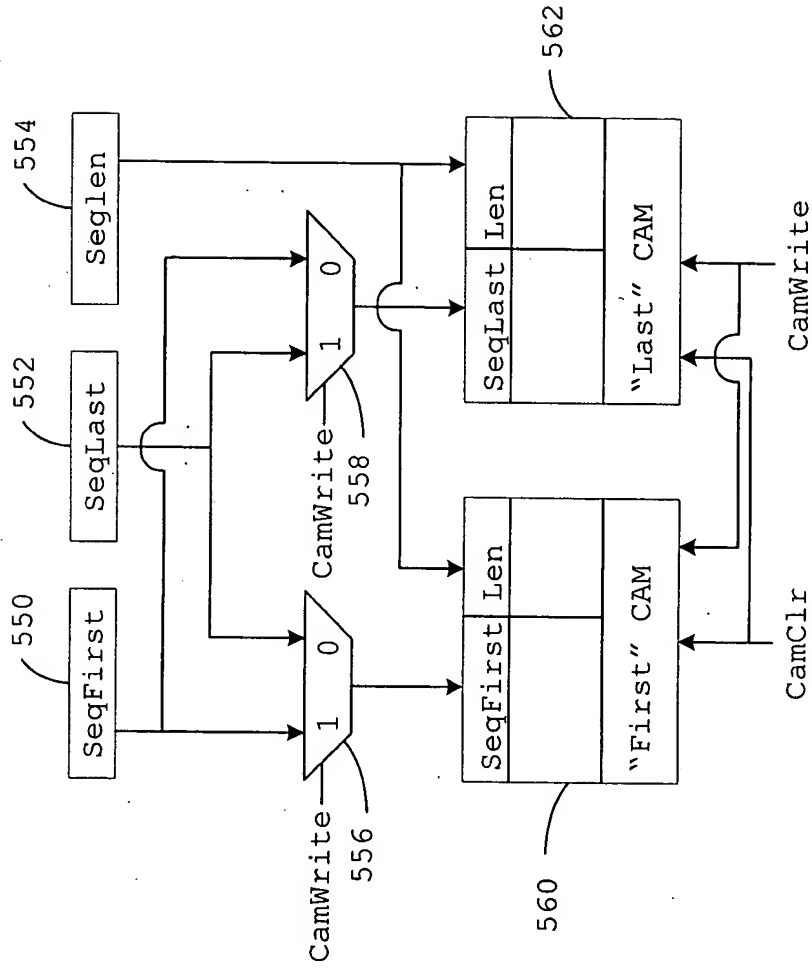


FIG. 12

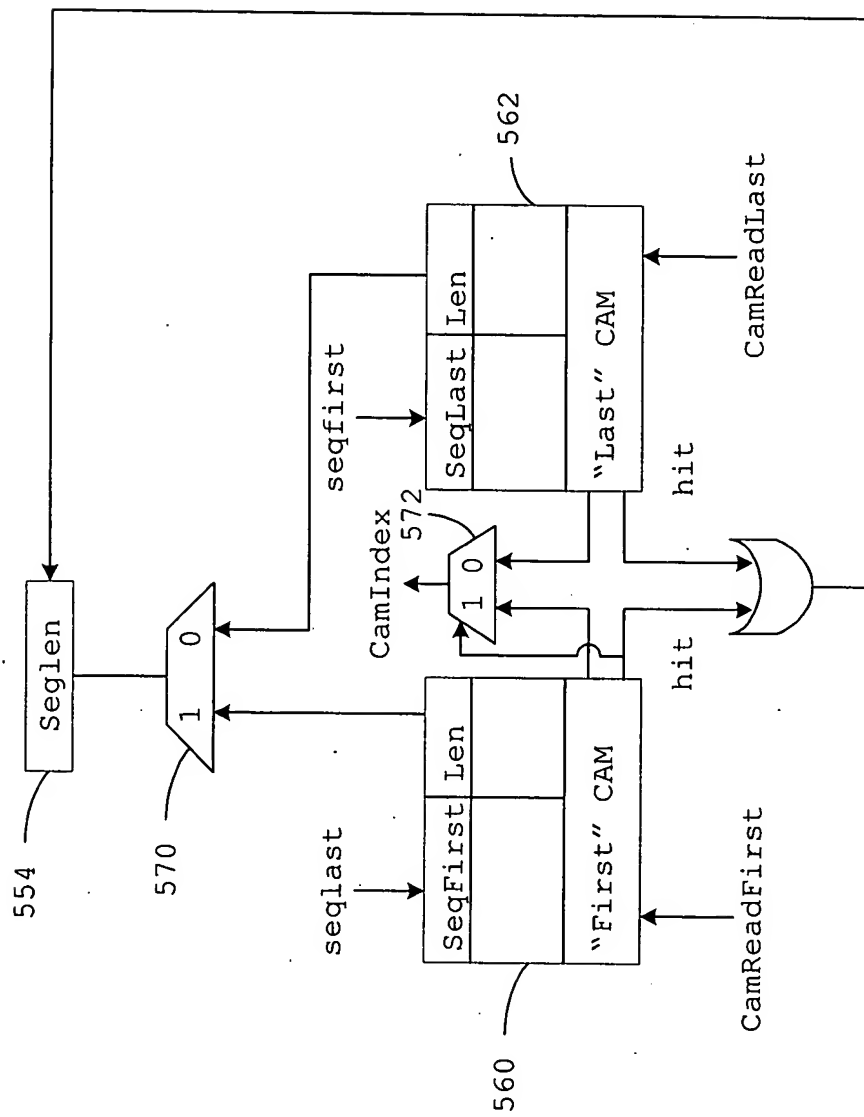


FIG. 13

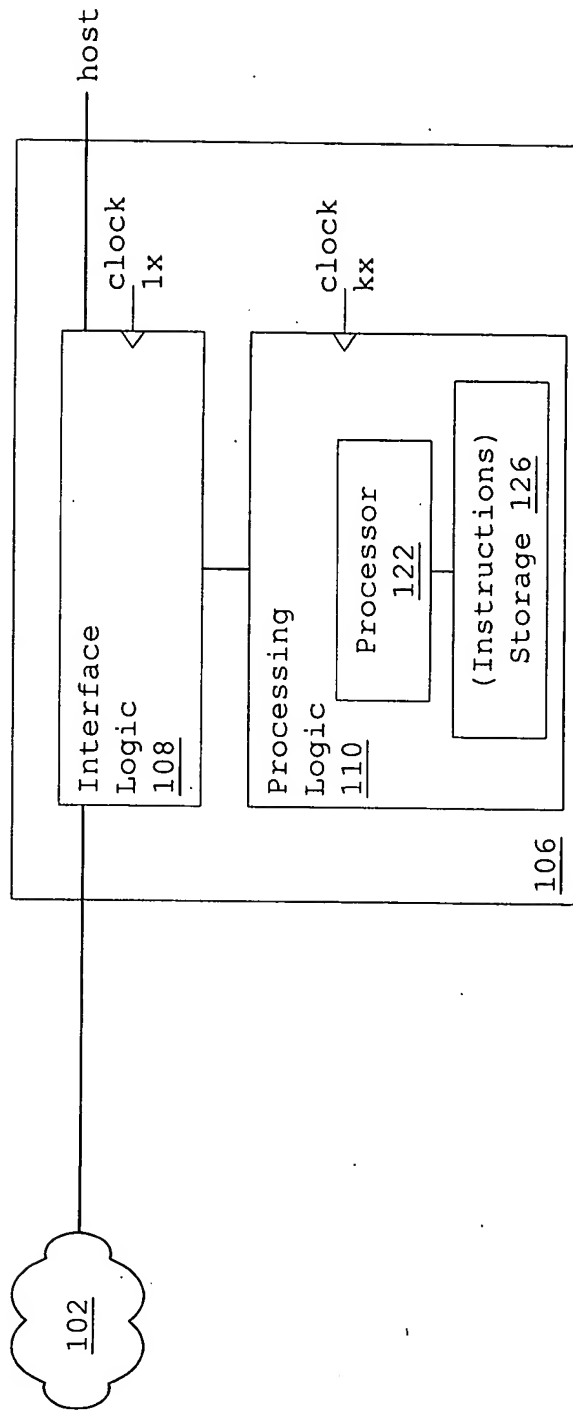


FIG. 14

# NETWORK PROTOCOL PROCESSOR

S. R. Vangal et al.

P17737

Sheet

15

of 32

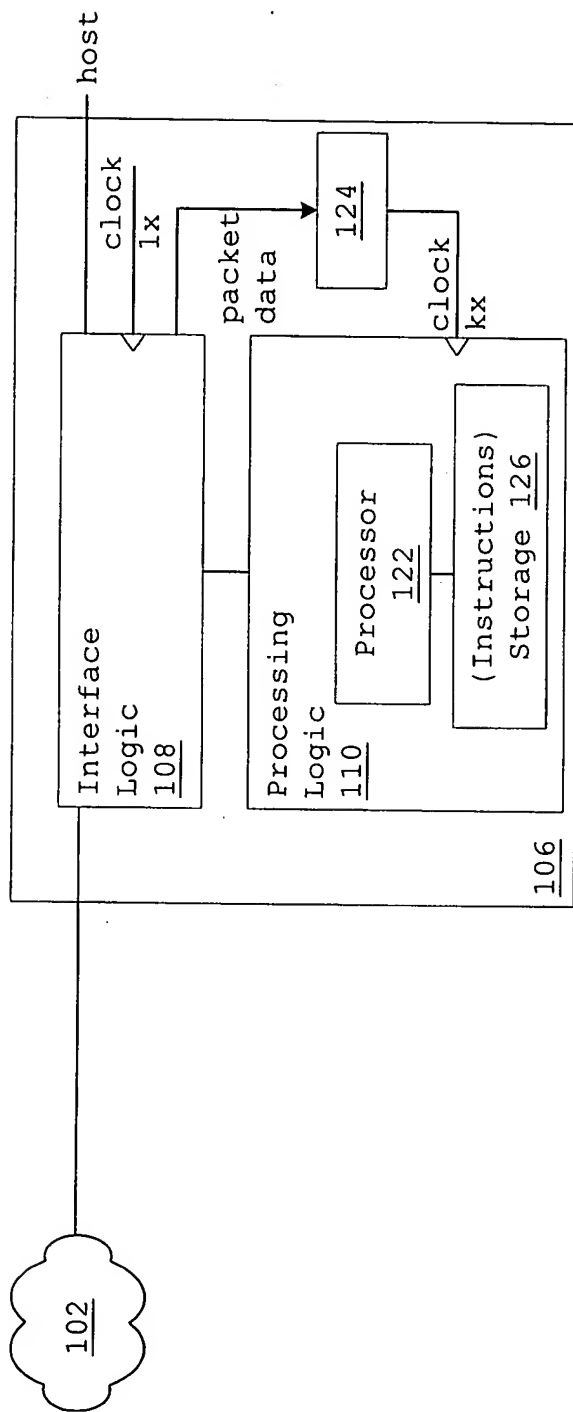


FIG. 15

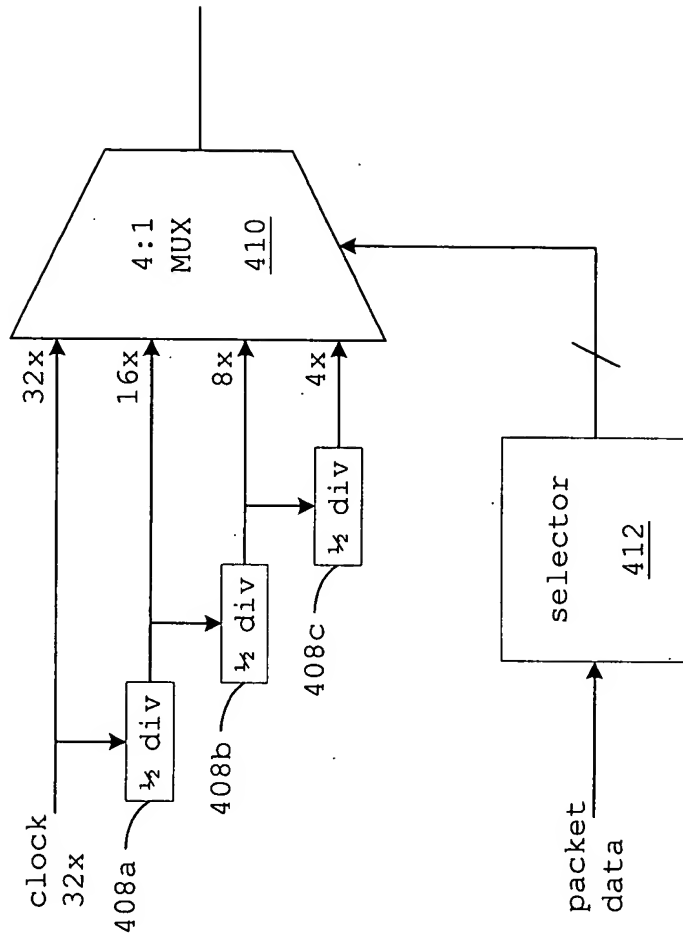


FIG. 16



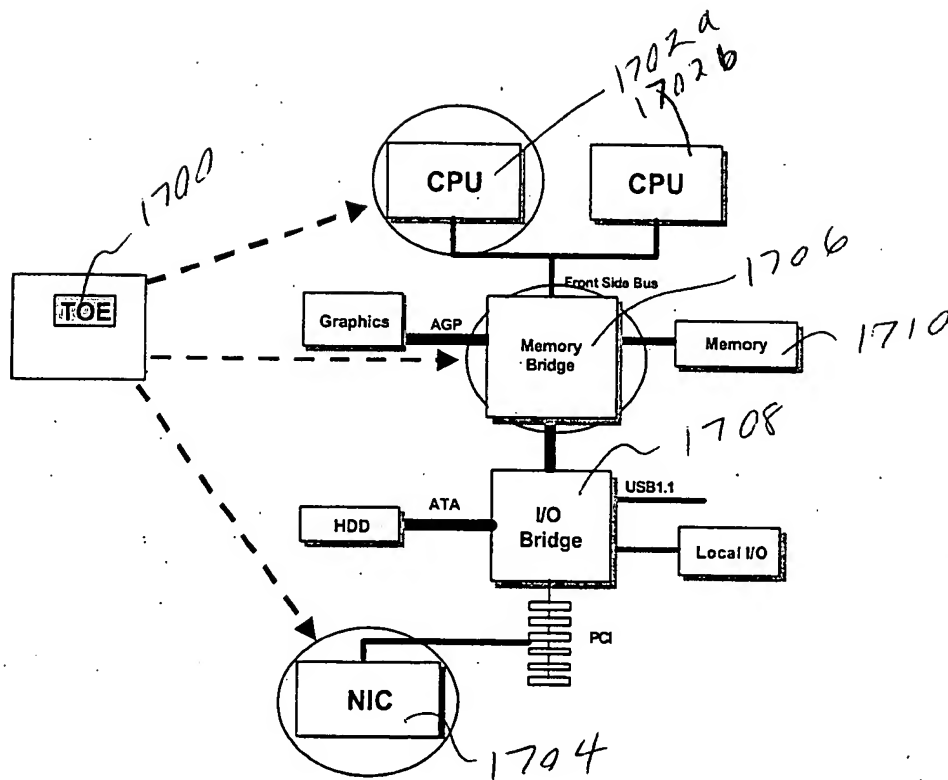


FIG. 17 A

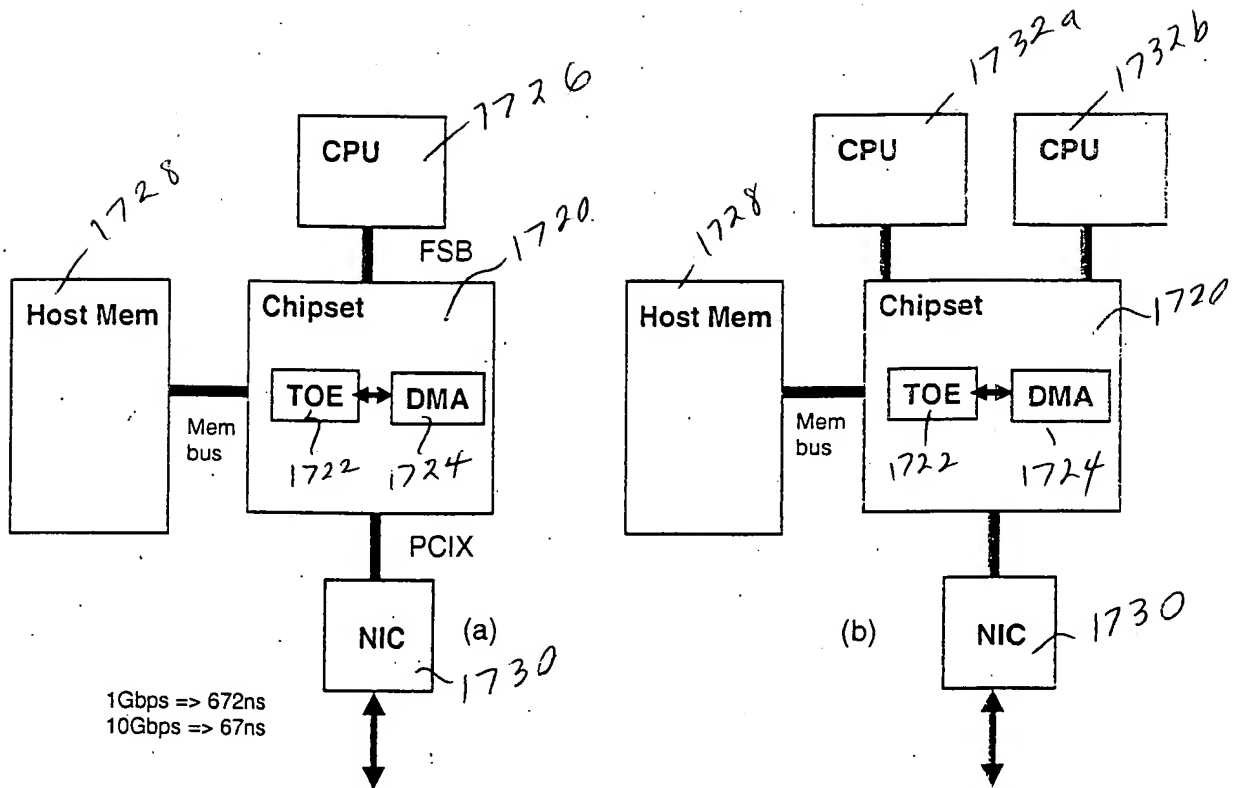


FIG. 17B

FIG. 17C

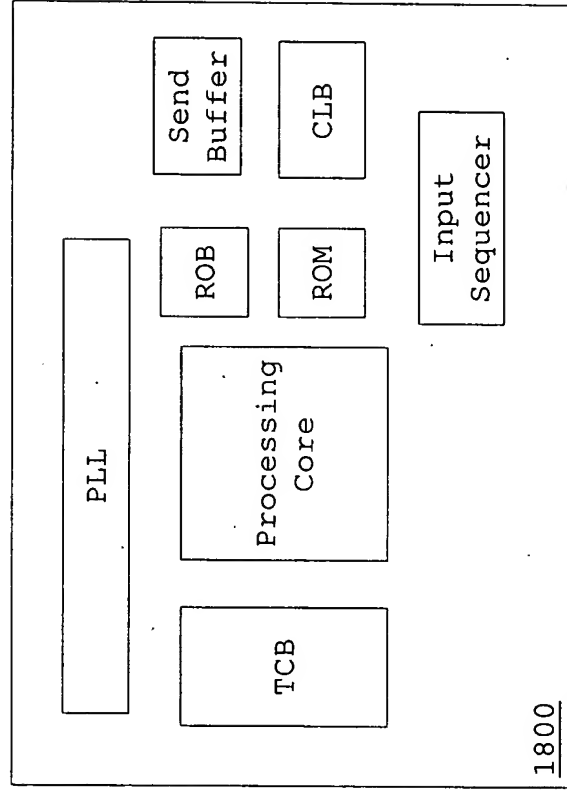
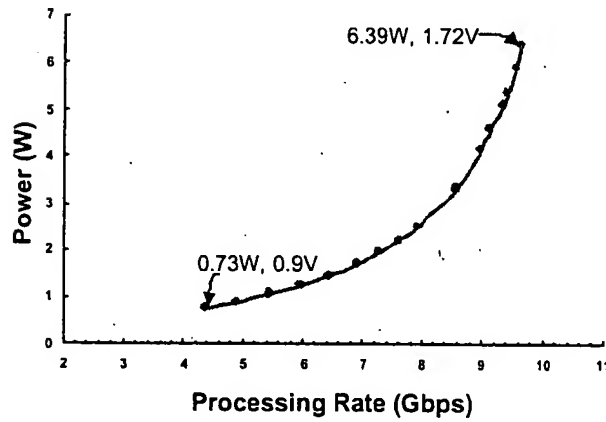
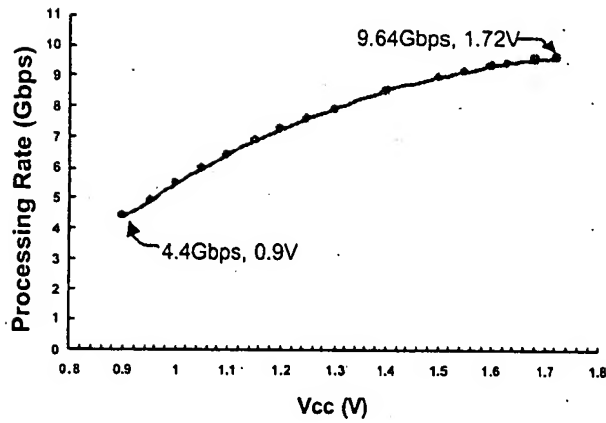


FIG. 18

FIG. 19A

1900



1910

FIG. 19B

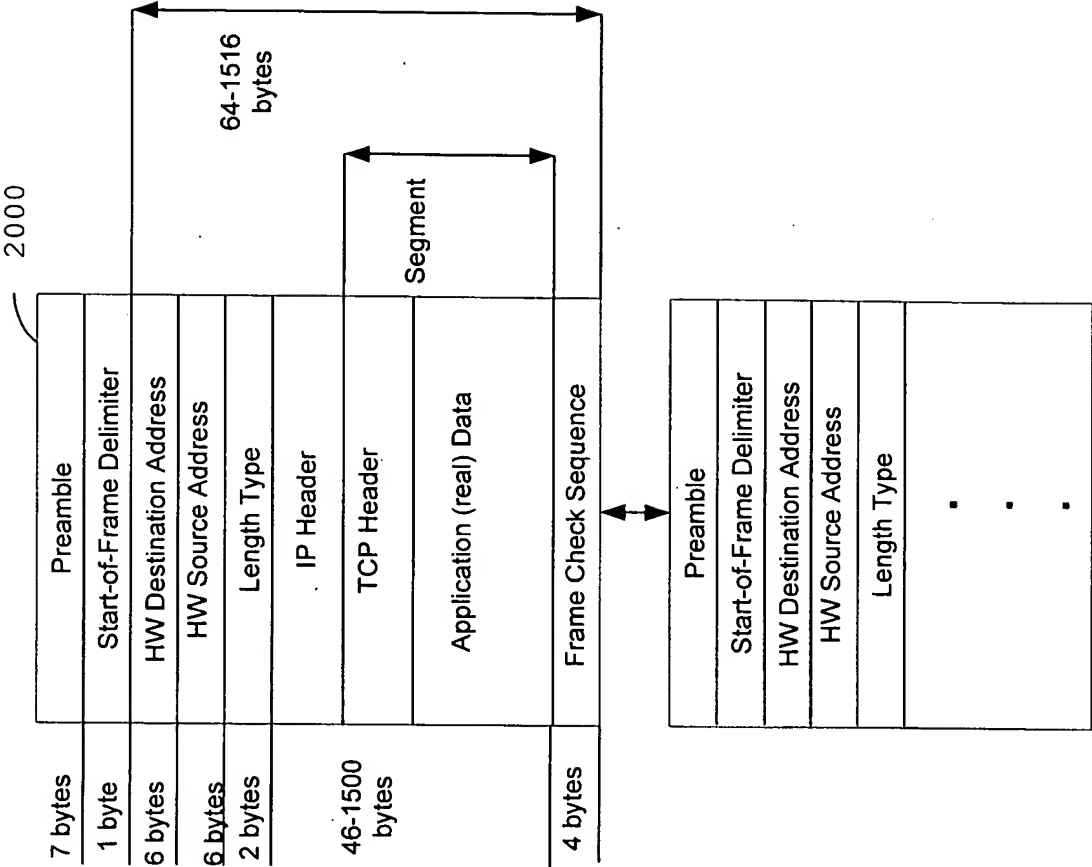


FIG. 20

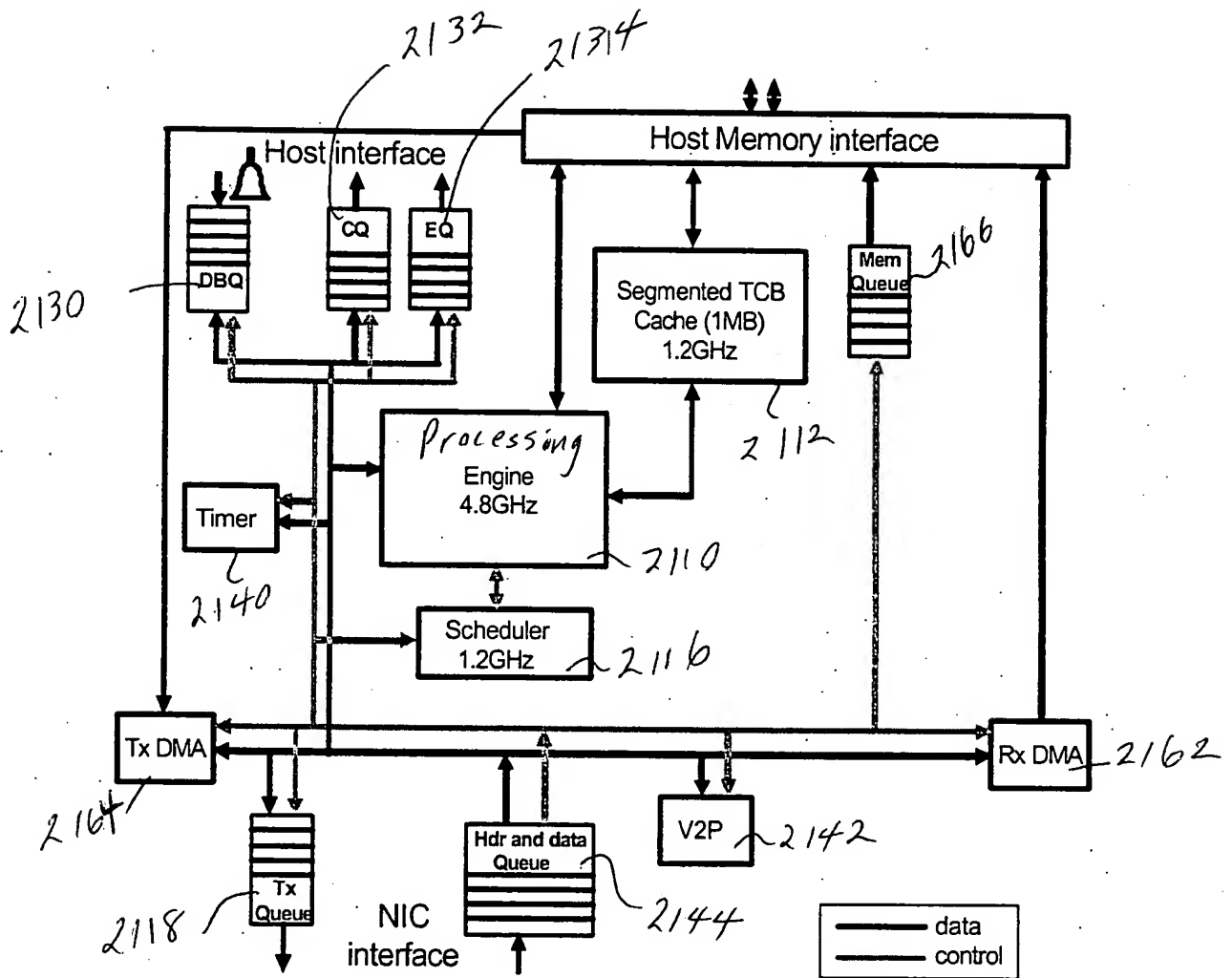


FIG. 21

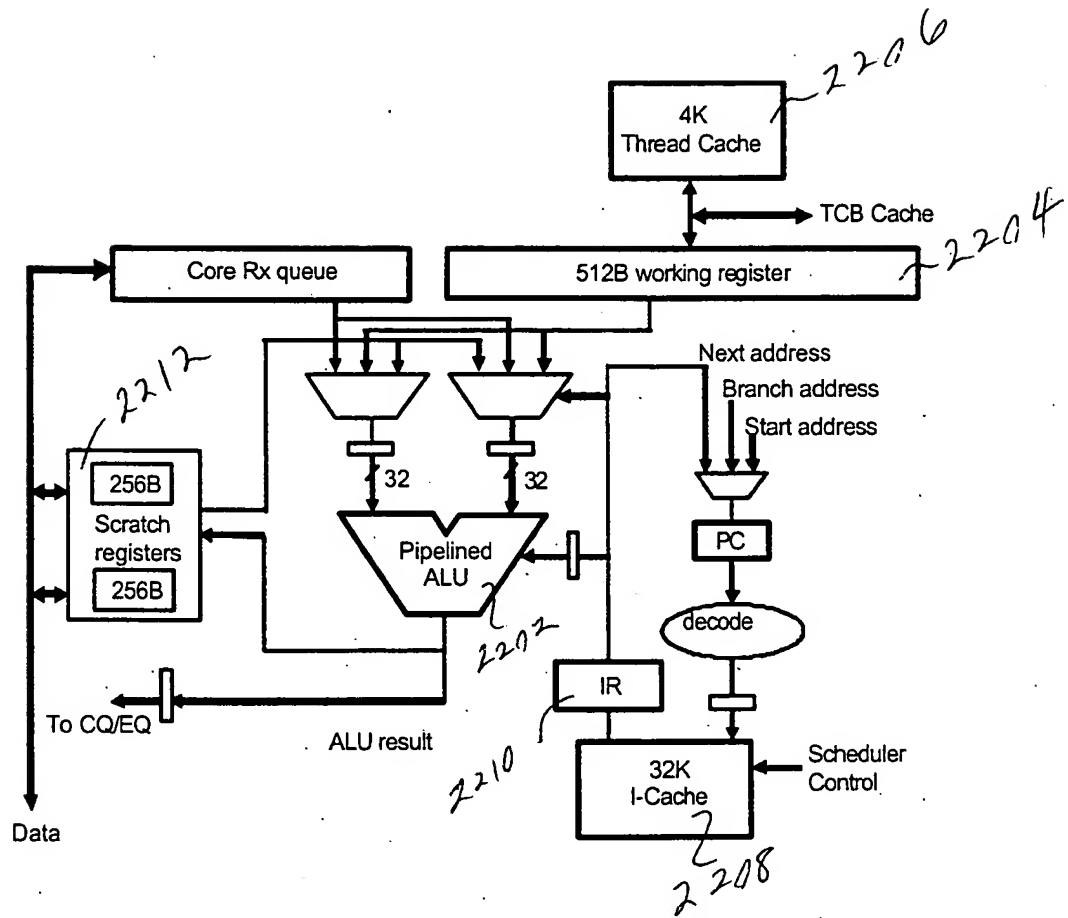
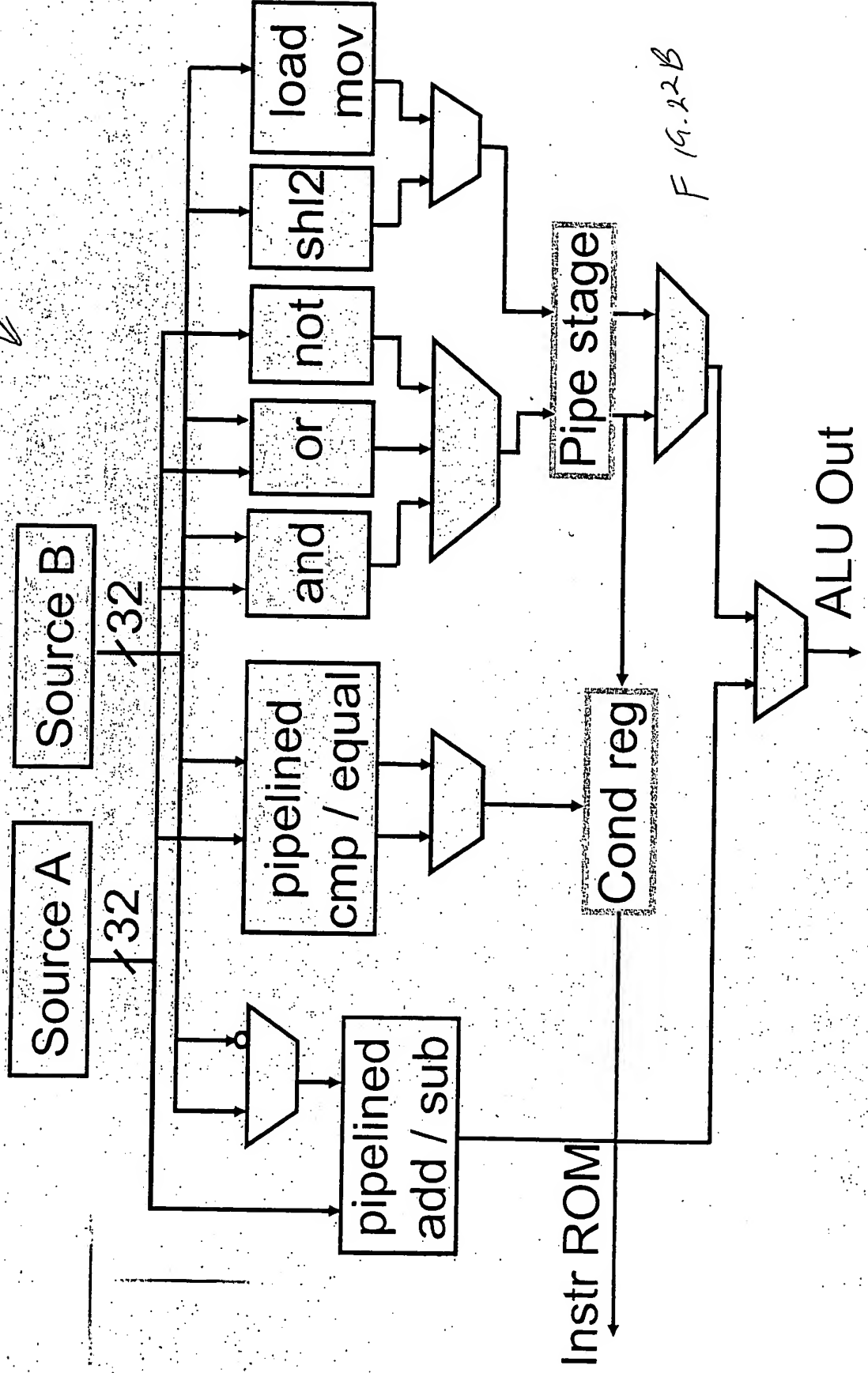


FIG-22 A

✓ 2202



F 19.22B



BEST AVAILABLE COPY

BEST AVAILABLE COPY

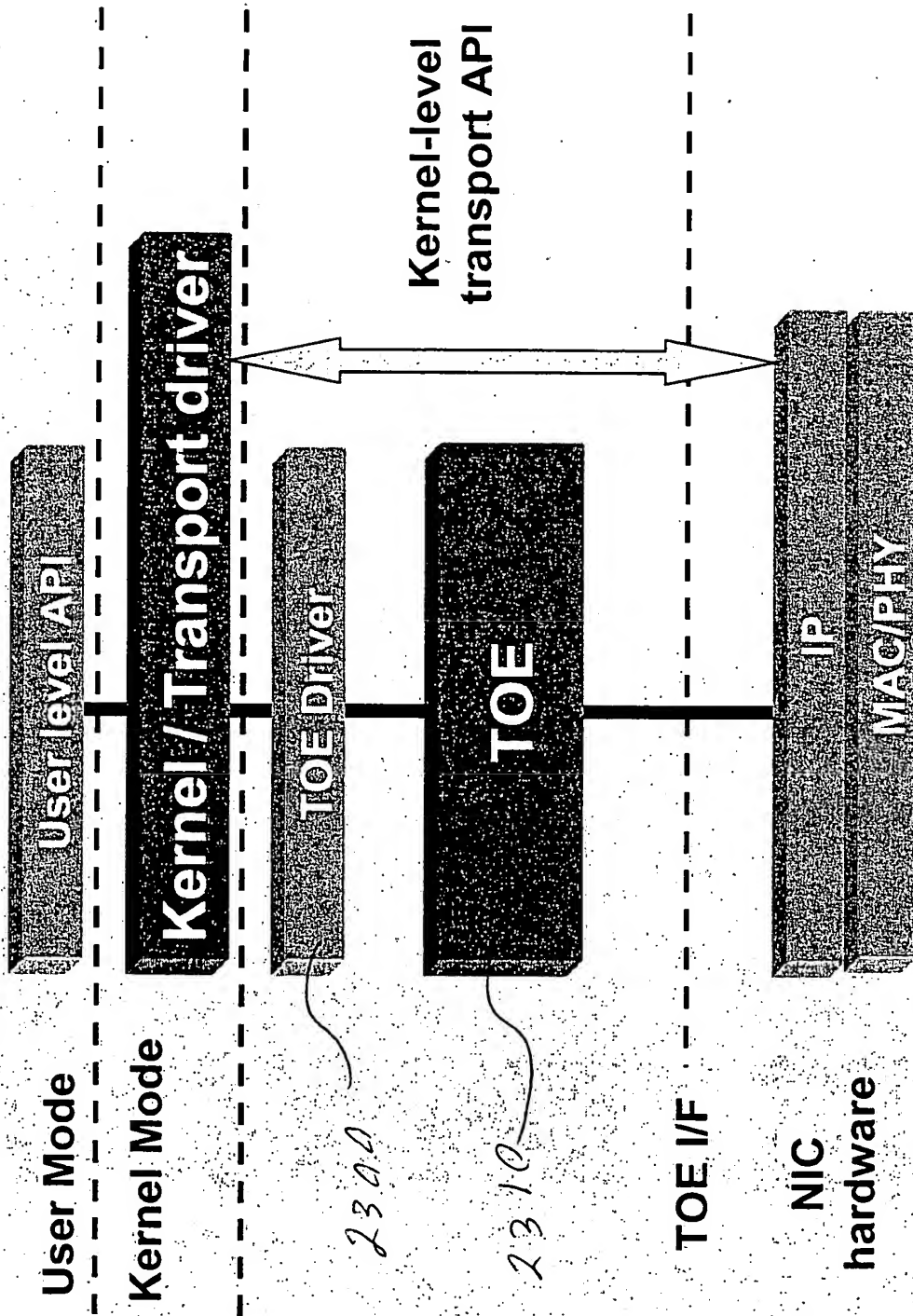


FIG. 23

BEST AVAILABLE COPY

# NETWORK PROTOCOL PROCESSOR

S. R. Vangal et al.

P17737

Sheet 26 of 32

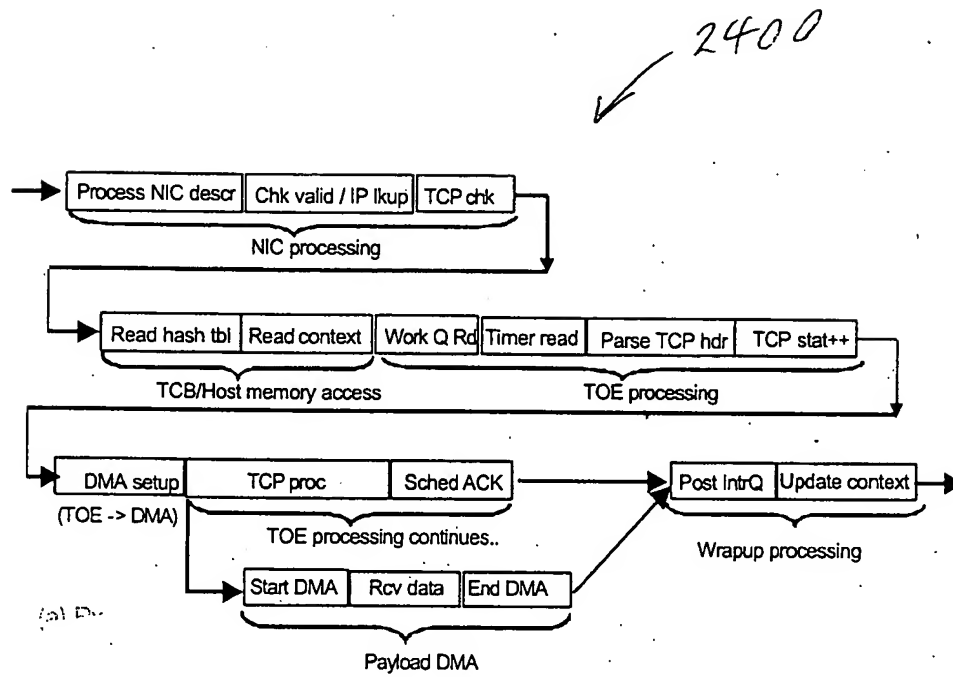


FIG. 24A

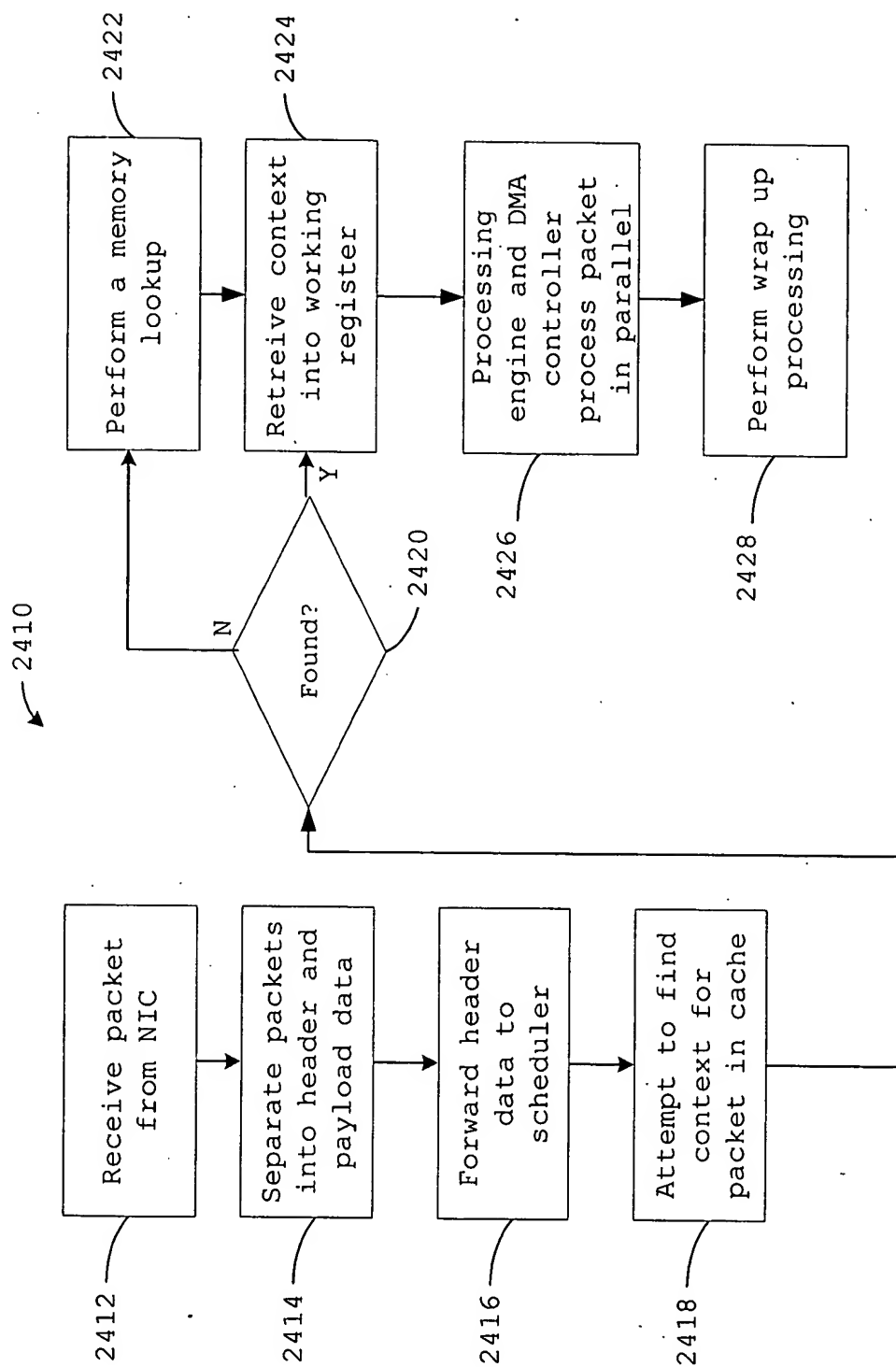


FIG. 24B

# NETWORK PROTOCOL PROCESSOR

S. R. Vangal et al.

P17737

Sheet 28 of 32

2450

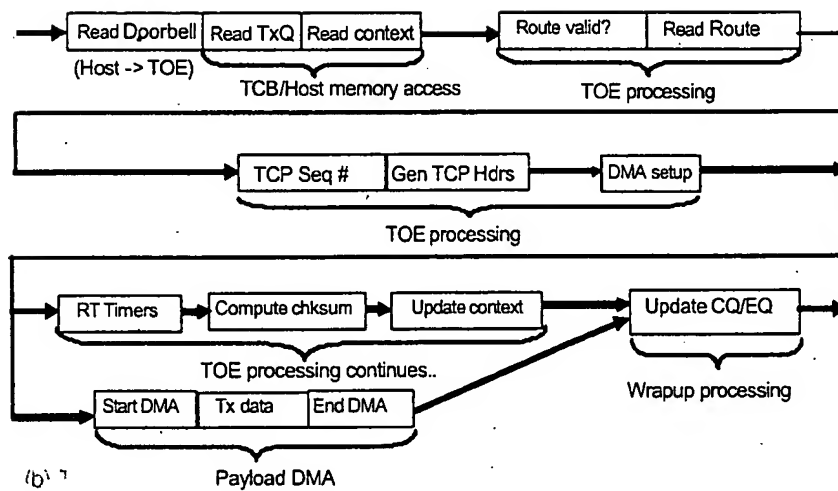


FIG. 24C

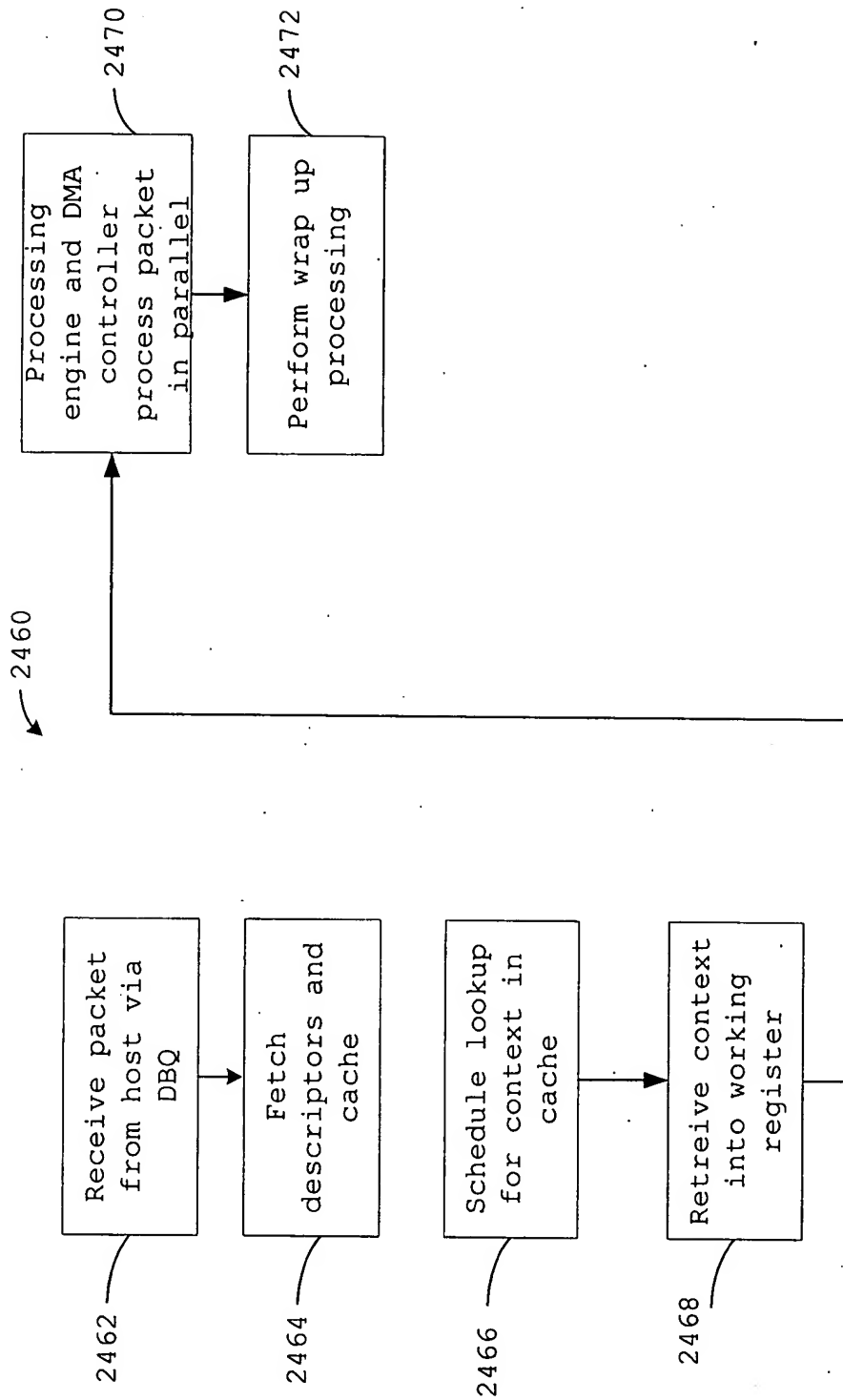


FIG. 24D

General purpose

LOAD A ← data
MOV A → B
AND A B → cond
OR A B → cond
ADD A B → C
SUB A B → C
CMP A B → cond
EQUAL A B → cond
NOT A → C
BREQZ / BRNEQZ label
JMP label
SHL2 A
NOP

Special purpose

Category	Instructions
Context access	TCBRD, TCBWR
Hashing	HSHLKP, HSHUPDT
Multi-threading	THRDSV, THRDST
DMA commands	DMATX, DMARX
Timers	TIMERRD, TIMERRW
Network to host byte order	HTONS, HTONL, NTOHL, NTOHS

FIG-2SB

FIG2SA

FIG. 26A

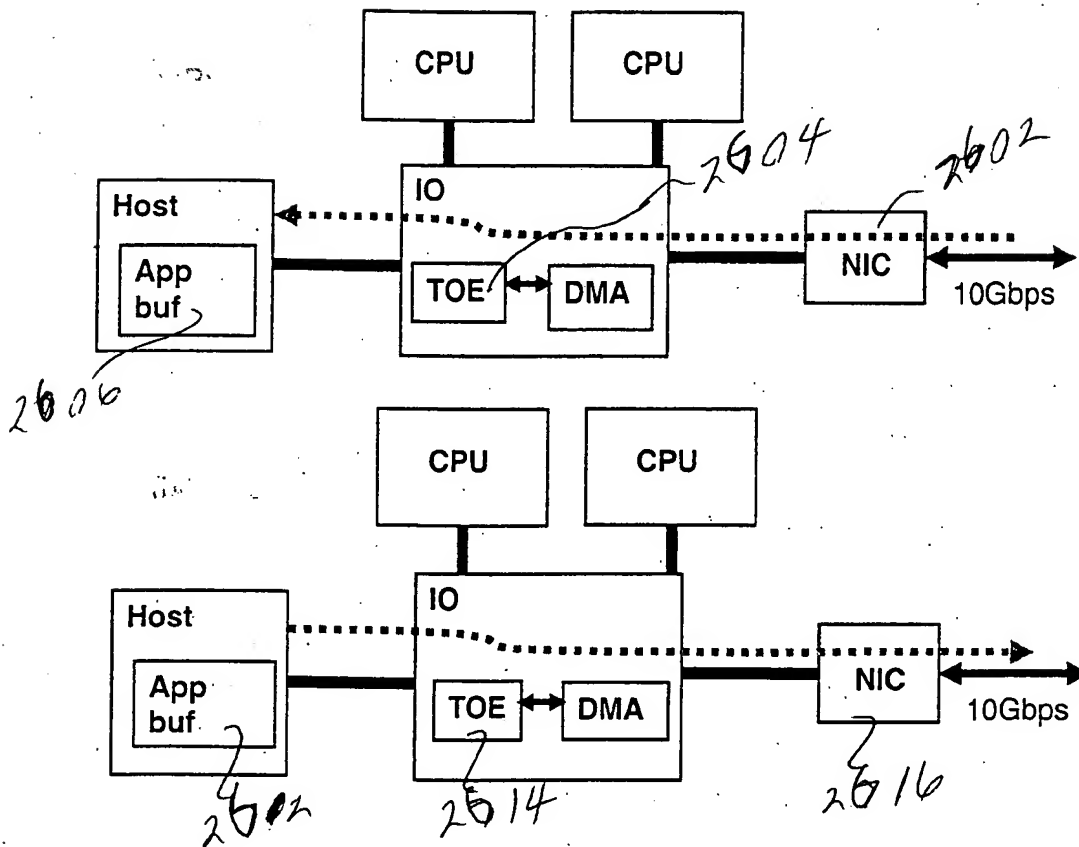


FIG. 26B

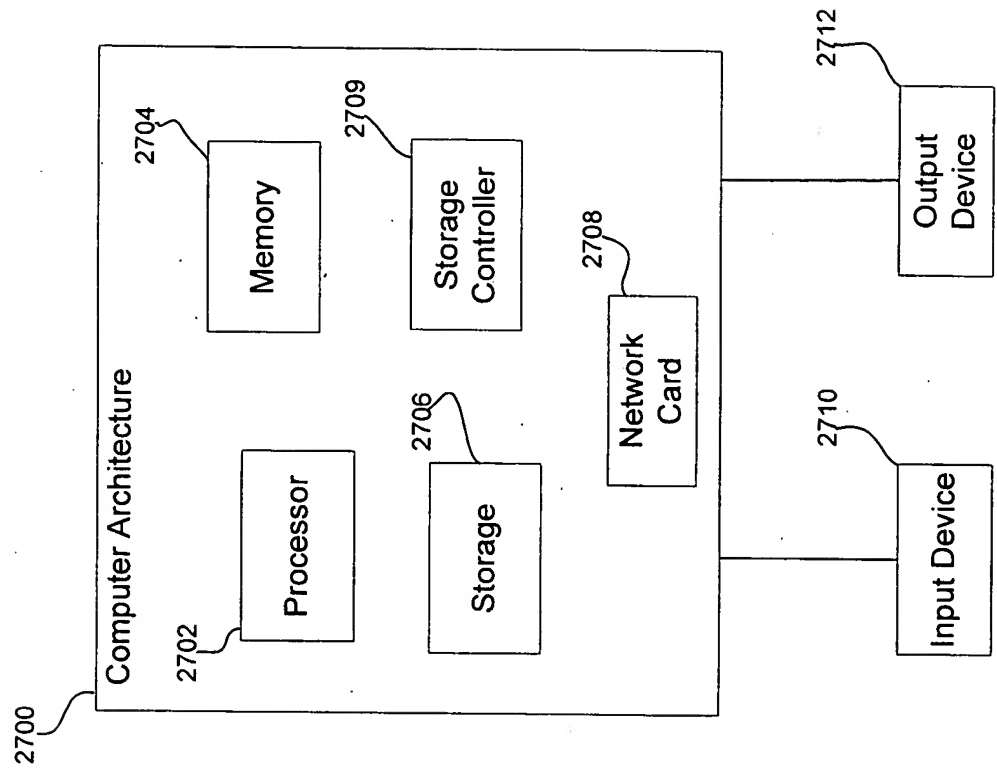


FIG. 27